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## RAW SEQUENCE LISTING

DATE: 06/23/2003

PATENT APPLICATION: US/09/719,277C

TIME: 14:02:04

Input Set : A:\seqlistcorr.txt

Output Set: N:\CRF4\06232003\I719277C.raw

3 <110> APPLICANT: Branch, Andrea D.  
 4 Walewski, Jose L.  
 5 Stump, DeCherd D.  
 7 <120> TITLE OF INVENTION: NOVEL HEPATITIS C VIRUS PEPTIDES AND USES THEREOF  
 10 <130> FILE REFERENCE: RII-003CPUS  
 12 <140> CURRENT APPLICATION NUMBER: US 09/719277C  
 C--> 13 <141> CURRENT FILING DATE: 2001-04-13  
 15 <150> PRIOR APPLICATION NUMBER: US 60/088670  
 16 <151> PRIOR FILING DATE: 1998-06-09  
 18 <150> PRIOR APPLICATION NUMBER: US 60/089138  
 19 <151> PRIOR FILING DATE: 1998-06-11  
 21 <150> PRIOR APPLICATION NUMBER: PCT/US99/12929  
 22 <151> PRIOR FILING DATE: 1999-06-09  
 24 <160> NUMBER OF SEQ ID NOS: 17  
 26 <170> SOFTWARE: PatentIn Ver. 2.0  
 28 <210> SEQ ID NO: 1  
 29 <211> LENGTH: 595  
 30 <212> TYPE: DNA  
 31 <213> ORGANISM: Hepatitis C virus  
 33 <400> SEQUENCE: 1  
 34 gcacgaatcc taaacctcaa agaaaaacca aaçgtaacac caaccgtcgc ccacaggacg 60  
 35 tcaagttccc ggggtggcgt cagatcggtg gtggagtta cttgttgccg cgcaggggcc 120  
 36 ctgattggg tgtgcgcgcg acgaggaaga cttccgagcg gtcgcaacct cgaggtagac 180  
 37 gtcagcctat ccccaaggca cgtcggcccg agggcaggac ctgggctcag cccgggtacc 240  
 38 cttggcccct ctatggcaat gaggggtgcg ggtgggcggg atggctcctg tctccccgtg 300  
 39 gctctcggcc tagctggggc cccacagacc cccggcgtag gtcgcgcaat ttgggtaagg 360  
 40 tcatcgatac ccttacgtgc ggcttcgccc acctcatggg gtacataaccg ctgctcggcg 420  
 41 cccctcttgg aggcgctgcc agggccctgg cgcattggcg ccgggttctg gaagacggcg 480  
 42 tgaactatgc aacagggaac cttcctggtt gctctttctc tatcttcctt ctggccctgc 540  
 43 tctcttgccg gactgtgccc gcttcagcct accaagtgcg caattcctcg gggct 595  
 45 <210> SEQ ID NO: 2  
 46 <211> LENGTH: 196  
 47 <212> TYPE: PRT  
 48 <213> ORGANISM: Hepatitis C virus  
 50 <400> SEQUENCE: 2  
 51 Ala Arg Ile Leu Asn Leu Lys Glu Lys Pro Asn Val Thr Pro Thr Val  
 52 1 5 10 15  
 54 Ala His Arg Thr Ser Ser Ser Arg Val Ala Val Arg Ser Leu Val Glu  
 55 20 25 30  
 57 Phe Thr Cys Cys Arg Ala Gly Ala Leu Asp Trp Val Cys Ala Arg Arg  
 58 35 40 45  
 60 Gly Arg Leu Pro Ser Gly Arg Asn Leu Glu Val Asp Val Ser Leu Ser  
 61 50 55 60

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63 Pro Arg His Val Gly Pro Arg Ala Gly Pro Gly Leu Ser Pro Gly Thr
64 65 70 75 80
66 Leu Gly Pro Ser Met Ala Met Arg Val Ala Gly Gly Arg Asp Gly Ser
67 85 90 95
69 Cys Leu Pro Val Ala Leu Gly Leu Ala Gly Ala Pro Gln Thr Pro Gly
70 100 105 110
72 Val Gly Arg Ala Ile Trp Val Arg Ser Ser Ile Pro Leu Arg Ala Ala
73 115 120 125
75 Ser Pro Thr Ser Trp Gly Thr Tyr Arg Ser Ser Ala Pro Leu Leu Glu
76 130 135 140
78 Ala Ala Pro Gly Pro Trp Arg Met Ala Ser Gly Phe Trp Lys Thr Ala
79 145 150 155 160
81 Thr Met Gln Gln Gly Thr Phe Leu Val Ala Leu Ser Leu Ser Ser Phe
82 165 170 175
84 Trp Pro Cys Ser Leu Ala Leu Cys Pro Leu Gln Pro Thr Lys Cys Ala
85 180 185 190
87 Ile Pro Arg Gly
88 195

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91 &lt;210&gt; SEQ ID NO: 3

92 &lt;211&gt; LENGTH: 13

93 &lt;212&gt; TYPE: PRT

94 &lt;213&gt; ORGANISM: Hepatitis C virus

96 &lt;220&gt; FEATURE:

97 &lt;221&gt; NAME/KEY: Variant

98 &lt;222&gt; LOCATION: 8

99 &lt;223&gt; OTHER INFORMATION: Xaa = Asn or Lys

101 &lt;220&gt; FEATURE:

102 &lt;221&gt; NAME/KEY: Variant

103 &lt;222&gt; LOCATION: 9

104 &lt;223&gt; OTHER INFORMATION: Xaa = Val or Glu

106 &lt;220&gt; FEATURE:

107 &lt;221&gt; NAME/KEY: Variant

108 &lt;222&gt; LOCATION: 13

109 &lt;223&gt; OTHER INFORMATION: Xaa = Ala or Val

111 &lt;400&gt; SEQUENCE: 3

W--&gt; 112 Leu Asn Leu Lys Glu Lys Pro Xaa Xaa Thr Pro Thr Xaa

113 1 5 10

116 &lt;210&gt; SEQ ID NO: 4

117 &lt;211&gt; LENGTH: 13

118 &lt;212&gt; TYPE: PRT

119 &lt;213&gt; ORGANISM: Hepatitis C virus

121 &lt;220&gt; FEATURE:

122 &lt;221&gt; NAME/KEY: Variant

123 &lt;222&gt; LOCATION: 6

124 &lt;223&gt; OTHER INFORMATION: Xaa = Leu or Ser

126 &lt;220&gt; FEATURE:

127 &lt;221&gt; NAME/KEY: Variant

128 &lt;222&gt; LOCATION: 10

129 &lt;223&gt; OTHER INFORMATION: Xaa = Ala or Val

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```

131 <220> FEATURE:
132 <221> NAME/KEY: Variant
133 <222> LOCATION: 11
134 <223> OTHER INFORMATION: Xaa = Ala or Val
136 <400> SEQUENCE: 4
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138 1 5 10
141 <210> SEQ ID NO: 5
142 <211> LENGTH: 14
143 <212> TYPE: PRT
144 <213> ORGANISM: Hepatitis C virus
146 <400> SEQUENCE: 5
147 Leu Asn Leu Lys Glu Lys Pro Asn Val Thr Pro Thr Ala Cys
148 1 5 10
151 <210> SEQ ID NO: 6
152 <211> LENGTH: 14
153 <212> TYPE: PRT
154 <213> ORGANISM: Hepatitis C virus
156 <400> SEQUENCE: 6
157 Ala Ala His Arg Thr Ser Ser Ser Arg Ala Val Val Arg Cys
158 1 5 10
161 <210> SEQ ID NO: 7
162 <211> LENGTH: 18
163 <212> TYPE: PRT
164 <213> ORGANISM: Hepatitis C virus
166 <400> SEQUENCE: 7
167 Pro Thr Asp Pro Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp
168 1 5 10 15
170 Thr Cys
173 <210> SEQ ID NO: 8
174 <211> LENGTH: 20
175 <212> TYPE: PRT
176 <213> ORGANISM: Hepatitis C virus
178 <400> SEQUENCE: 8
179 Gly Cys Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg
180 1 5 10 15
182 Arg Ala Pro Ile
183 20
185 <210> SEQ ID NO: 9
186 <211> LENGTH: 195
187 <212> TYPE: PRT
188 <213> ORGANISM: Hepatitis C virus
190 <400> SEQUENCE: 9
191 Ala Gln Ile Leu Asn Leu Lys Glu Lys Pro Asn Val Thr Pro Thr Ala
192 1 5 10 15
193 Ala His Arg Thr Leu Ser Ser Arg Val Ala Val Arg Ser Leu Ala Glu
194 20 25 30
195 Phe Thr Cys Cys Arg Ala Gly Ala Pro Asp Trp Val Cys Ala Arg Leu
196 35 40 45

```

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```

197 Gly Arg Leu Pro Ser Gly Arg Ser Leu Val Glu Gly Ala Ser Leu Ser
198      50                      55                      60
199 Pro Arg Ile Ala Gly Pro Arg Ala Gly Pro Gly Leu Ser Pro Gly Thr
200 65                      70                      75                      80
201 Leu Gly Pro Ser Met Ala Met Arg Val Ala Gly Gly Gln Asp Gly Ser
202                      85                      90                      95
203 Cys Pro Pro Ala Leu Gly Leu Leu Gly Ala Pro Met Thr Pro Gly
204                      100                      105                      110
205 Gly Gly Pro Ala Ile Trp Val Arg Ser Ser Ile Pro Leu Arg Ala Ala
206                      115                      120                      125
207 Ser Pro Thr Ser Trp Gly Thr Ser Arg Ser Ser Ala Pro Leu Gly Ala
208                      130                      135                      140
209 Ser Pro Glu Leu Trp Arg Met Ala Ser Gly Ser Trp Arg Thr Gly Ile
210 145                      150                      155                      160
211 Thr Gln Gln Gly Ile Phe Pro Val Ala Leu Phe Leu Ser Ser Phe Trp
212                      165                      170                      175
213 Leu Phe Cys Pro Ala Leu Ser Gln Leu Arg Pro Ser Lys Cys Ala Thr
214                      180                      185                      190
215 Leu Val Gly
216      195
219 <210> SEQ ID NO: 10
220 <211> LENGTH: 196
221 <212> TYPE: PRT
222 <213> ORGANISM: Hepatitis C virus
224 <400> SEQUENCE: 10
225 Ala Arg Ile Leu Asn Leu Lys Glu Lys Pro Asn Val Thr Pro Thr Val
226 1                      5                      10                      15
227 Ala His Arg Thr Ser Ser Ser Arg Val Ala Val Arg Ser Leu Val Glu
228      20                      25                      30
229 Phe Thr Cys Cys Arg Ala Gly Ala Leu Asp Trp Val Cys Ala Arg Arg
230      35                      40                      45
231 Gly Arg Leu Pro Ser Gly Arg Asn Leu Glu Val Asp Val Ser Leu Ser
232      50                      55                      60
233 Pro Arg His Val Gly Pro Arg Ala Gly Pro Gly Leu Ser Pro Gly Thr
234 65                      70                      75                      80
235 Leu Gly Pro Ser Met Ala Met Arg Val Ala Gly Gly Arg Asp Gly Ser
236      85                      90                      95
237 Cys Leu Pro Val Ala Leu Gly Leu Ala Gly Ala Pro Gln Thr Pro Gly
238      100                      105                      110
239 Val Gly Arg Ala Ile Trp Val Arg Ser Ser Ile Pro Leu Arg Ala Ala
240      115                      120                      125
241 Ser Pro Thr Ser Trp Gly Thr Tyr Arg Ser Ser Ala Pro Leu Leu Glu
242      130                      135                      140
243 Ala Ala Pro Gly Pro Trp Arg Met Ala Ser Gly Phe Trp Lys Thr Ala
244 145                      150                      155                      160
245 Thr Met Gln Gln Gly Thr Phe Leu Val Ala Leu Ser Leu Ser Ser Phe
246      165                      170                      175
247 Trp Pro Cys Ser Leu Ala Leu Cys Pro Leu Gln Pro Thr Lys Cys Ala
248      180                      185                      190

```

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Input Set : A:\seqlistcorr.txt

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```

249 Ile Pro Arg Gly
250      195
253 <210> SEQ ID NO: 11
254 <211> LENGTH: 192
255 <212> TYPE: PRT
256 <213> ORGANISM: Hepatitis C virus
258 <400> SEQUENCE: 11
259 Ala His Phe Leu Asn Leu Lys Glu Lys Pro Lys Glu Thr Pro Ser Val
260 1      5      10      15
261 Ala His Arg Thr Ser Ser Ser Arg Val Ala Asp Arg Ser Leu Val Glu
262      20      25      30
263 Tyr Thr Cys Cys Arg Ala Gly Ala His Asp Trp Val Cys Ala Arg Arg
264      35      40      45
265 Val Lys Leu Leu Asn Gly His Ser Leu Ala Asp Asp Asp Ser Leu Ser
266      50      55      60
267 Pro Arg Arg Val Gly Ala Lys Ala Gly Pro Gly Leu Ser Pro Gly Thr
268 65      70      75      80
269 Leu Gly Pro Ser Met Val Thr Arg Ala Ala Gly Gln Gly Gly Gly Ser
270      85      90      95
271 Cys Pro His Ala Ala Pro Val His Pro Gly Ala Gln Met Thr Pro Gly
272      100     105     110
273 Gly Gly Pro Ala Ile Trp Val Lys Ser Ser Ile Pro Arg Ala Asp Ser
274      115     120     125
275 Pro Thr Ser Trp Gly Thr Ser Arg Gly Gly Ala Leu Leu Glu Ala Ser
276      130     135     140
277 Gln Glu Pro Ser Arg Met Ala Gly Pro Leu Lys Thr Gly Ile Ser Gln
278 145     150     155     160
279 Gln Gly Thr Cys Pro Val Ala Pro Phe Leu Ser Ser Phe Leu Leu Cys
280      165     170     175
281 Ser Leu Ala Phe Ile Gln Gln Pro Val Ser Gly Gly Ile Arg Leu Ala
282      180     185     190
285 <210> SEQ ID NO: 12
286 <211> LENGTH: 197
287 <212> TYPE: PRT
288 <213> ORGANISM: Hepatitis C virus
290 <400> SEQUENCE: 12
291 Ala Gln Ile Leu Asn Leu Lys Glu Lys Pro Lys Glu Thr Gln Thr Ala
292 1      5      10      15
293 Ala His Arg Thr Leu Ser Ser Arg Val Ala Val Arg Ser Leu Ala Glu
294      20      25      30
295 Phe Thr Cys Cys Arg Ala Gly Ala Pro Gly Trp Val Cys Ala Arg Gln
296      35      40      45
297 Gly Arg Leu Leu Ser Asp Pro Ser Arg Val Asp Asp Ala Ser Pro Ser
298      50      55      60
299 Arg Lys Ile Gly Ala Pro Pro Ala Ser Pro Gly Glu Ser Gln Asp Ile
300 65      70      75      80
301 Leu Gly Pro Cys Thr Glu Thr Arg Val Ala Ala Gly Arg Val Gly Ser
302      85      90      95
303 Cys Pro Pro Ala Gly Leu Val Leu Leu Gly Ala Pro Pro Thr Pro Gly

```

**RAW SEQUENCE LISTING ERROR SUMMARY**  
PATENT APPLICATION: US/09/719,277C

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Input Set : A:\seqlistcorr.txt  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; Xaa Pos. ~~8, 9, 13~~  
Seq#:4; Xaa Pos. ~~6, 10, 11~~

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 1,2,6,9,10,11,12,23,24,25,26,27,28,29,30,31,32,33,34,35,36  
Seq#:1; Line(s) 37,38,39,40,41,42,43,44,45  
Seq#:2; Line(s) 46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65  
Seq#:2; Line(s) 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85  
Seq#:2; Line(s) 86,87,88,89,90,91  
Seq#:3; Line(s) 92,93,94,95,98,100,103,105,108,110,111,112,113,114,115,116  
Seq#:4; Line(s) 117,118,119,120,123,125,128,130,133,135,136,137,138,139,140  
Seq#:4; Line(s) 141  
Seq#:5; Line(s) 142,143,144,145,146,147,148,149,150,151  
Seq#:6; Line(s) 152,153,154,155,156,157,158,159,160,161  
Seq#:7; Line(s) 162,163,164,165,166,167,168,169,170,171,173  
Seq#:8; Line(s) 174,175,176,177,178,179,180,181,182